

C.OC, # 178

11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244 East 11115 Montgomery, Suite B, Spokane, WA 99206-4776 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

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(503) 906-9200

FAX 906-9210 (541) 383-9310 FAX 382-7588

CHAIN OF CUSTODY REPORT

Work Order #: M107035

CLIENT: Bristal					INVO	ICE TC	: Bu	-1540	1.						TURN	NAROUN	D REQU	EST in Bus	siness Da	ays*
REPORT TO: ANNE H	VANA Letton																LITT	ganic Analyse		
ADDRESS: Amchitha	Tolonal Ak														10 7	5	4	3 2	1	< 1
															STD.			carbon Analys		ı
PHONE: 907 770-0 PROJECT NAME: Amchil	0974 FAX:	170	-09-	15	P.O. N	UMBE	R:	2100	10						j <u></u>	5 4	3	2 1	<1	
PROJECT NAME: Anchi	tha					REC	QUEST	ED AN	ALYSE	S					ST		P!	lease Specif	y	
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Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

7 December, 2001

Anne Kranawetter Bristol Environmental & Engineering 2000 W International Airport C#1 Anchorage, AK 99502-1116

RE: Amchitka

Enclosed are the results of analyses for samples received by the laboratory on 07/14/01 16:33. If you have any questions concerning this report, please feel free to contact me.

This report was recreated from a previously issued final report in order to provide an electronic copy. The final report used for these electronic copies may have been previously issued as an amended report due to client requested changes to sample names, etc. No data has changed since submission of the previously issued final, or amended, report.

Sincerely,

Stephen Wilson

Environmental Group Leader

1112

Work Orders included in this report:

M107035



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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported:

07/24/01 15:52

Anchorage, AK 99502-1116 Project Manager: Anne Kranawetter

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
01AMF91001SL	M107035-01	Soil	07/14/01 11:05	07/14/01 16:33
01AMF91002SL	M107035-02	Soil	07/14/01 11:10	07/14/01 16:33
01AMF91003SL	M107035-03	Soil	07/14/01 11:30	07/14/01 16:33

COC #178

Ni will be reported from Fix lab.

North Creek Analytical - Mobile Lab



Anchorage, AK 99502-1116

Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-9223

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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported:

07/24/01 15:52

Project Manager: Anne Kranawetter

Diesel Hydrocarbons (C10-C25) per AK102 North Creek Analytical - Mobile Lab

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMF91001SL (M107035-01) Soil					Sampled: 07	/14/01 Rece	eived: 07/14/	01	
Diesel Range Organics	ND	150	mg/kg dry	1	AK 102	07/15/01	07/15/01	0107056	
Surr: 1-Chlorooctadecane Surr: Triacontane	92.3 % 109 %	50-150 50-150							
01AMF91002SL (M107035-02) Soil					Sampled: 07	/14/01 Rece	eived: 07/14/	01	
Diesel Range Organics	ND	150	mg/kg dry	1	AK 102	07/15/01	07/15/01	0107056	
Surr: 1-Chlorooctadecane Surr: Triacontane	72.2 % 100 %	50-150 50-150							
01AMF91003SL (M107035-03) Soil					Sampled: 07/	/14/01 Rece	eived: 07/14/	01	
Diesel Range Organics	ND	150	mg/kg dry	1	AK 102	07/15/01	07/15/01	0107056	
Surr: 1-Chlorooctadecane Surr: Triacontane	99.2 % 119 %	50-150 50-150							

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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Project Number: 21090 **Reported:**Project Manager: Anne Kranawetter 07/24/01 15:52

BTEX,MTBE and Naphthalene per EPA Method 8021B North Creek Analytical - Mobile Lab

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMF91001SL (M107035-01) Soil					Sampled: 07/	/14/01 Rece	eived: 07/14/	01	
Benzene	ND	0.0373	mg/kg dry	50	!1B BTEX/M	ΓΙ 07/16/01	07/16/01	0107064	
Toluene	ND	0.149	"	"	"	"	"	"	
Ethylbenzene	ND	0.149	"	"	"	"	"	"	
Xylenes (total)	ND	0.299	"	"	"	"	"	"	
Naphthalene	ND	1.49	"	"	"	"	"	"	
Surr: 4-BFB	87.0 %	50-150							
01AMF91002SL (M107035-02) Soil					Sampled: 07	/14/01 Rece	eived: 07/14/	01	
Benzene	ND	0.0457	mg/kg dry	50	!1B BTEX/M	ГІ 07/16/01	07/16/01	0107064	
Toluene	ND	0.183	"	"	"	"	"	"	
Ethylbenzene	ND	0.183	"	"	"	"	"	"	
Xylenes (total)	ND	0.366	"	"	"	"	"	"	
Naphthalene	ND	1.83	"	"	"	"	"	"	
Surr: 4-BFB	87.6 %	50-150							
01AMF91003SL (M107035-03) Soil					Sampled: 07/	/14/01 Rece	eived: 07/14/	01	
Benzene	ND	0.0301	mg/kg dry	50	!1B BTEX/M	ΓΙ 07/16/01	07/16/01	0107064	
Toluene	ND	0.120	"	"	"	"	"	"	
Ethylbenzene	ND	0.120	"	"	"	"	"	"	
Xylenes (total)	ND	0.241	"	"	"	"	"	"	
Naphthalene	ND	1.20	"	"	"	"	"	"	
Surr: 4-BFB	92.9 %	50-150							

North Creek Analytical - Mobile Lab



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Bristol Environmental & Engineering 2000 W International Airport C#1

Project: Amchitka
Project Number: 21090

Reported:

Anchorage, AK 99502-1116

Project Manager: Anne Kranawetter

07/24/01 15:52

Total Metals per EPA 6000/7000 Series Methods North Creek Analytical - Mobile Lab

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMF91001SL (M107035-01) Soil					Sampled: 07/	14/01 Rece	eived: 07/14/	01	
Arsenic	ND	2.50	mg/kg dry	1	EPA 6020	07/22/01	07/23/01	0107081	
Barium	21.3	2.50	"	"	"	"	"	"	
Cadmium	ND	2.50	"	"	"	"	"	"	
Chromium	10.5	2.50	"	"	"	"	"	"	
Lead	ND	2.50	"	"	"	"	"	"	
Selenium	ND	2.50	"	"	"	"	"	"	
Silver	ND	2.50	"	"	"	"	"	"	
Vanadium	46.1	2.50	"	"	"	"	"	"	
Mercury	ND	0.00500	"	"	EPA 1631	07/20/01	07/21/01	0107076	

North Creek Analytical - Mobile Lab

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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported: 07/24/01 15:52

Project Manager: Anne Kranawetter

Physical Parameters per APHA/ASTM/EPA Methods North Creek Analytical - Mobile Lab

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMF91001SL (M107035-01) Soil					Sampled: 07/	14/01 Rece	eived: 07/14/	01	
% Solids	93.3	0.0100 % 1	by Weight	1	Gravimetric	07/15/01	07/16/01	0107063	
01AMF91002SL (M107035-02) Soil					Sampled: 07/	14/01 Rece	eived: 07/14/	01	
% Solids	91.1	0.0100 % 1	by Weight	1	Gravimetric	07/15/01	07/16/01	0107063	
01AMF91003SL (M107035-03) Soil					Sampled: 07/	14/01 Rece	eived: 07/14/	01	
% Solids	88.8	0.0100 % 1	by Weight	1	Gravimetric	07/15/01	07/16/01	0107063	

North Creek Analytical - Mobile Lab



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Bristol Environmental & Engineering 2000 W International Airport C#1

Project: Amchitka
Project Number: 21090

Reported: 07/24/01 15:52

Anchorage, AK 99502-1116

Project Manager: Anne Kranawetter

Diesel Hydrocarbons (C10-C25) per AK102 - Quality Control

North Creek Analytical - Mobile Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Blank (0107056-BLK1)			Prepared	d & Analy	zed: 07/1	5/01		
Diesel Range Organics	ND	150 mg/kg wet						
Surr: 1-Chlorooctadecane	22.1	"	23.7		93.2	50-150		
Surr: Triacontane	22.4	"	23.5		95.3	50-150		
LCS (0107056-BS1)			Prepared	d & Analy	zed: 07/1	5/01		
Diesel Range Organics	1120	150 mg/kg wet	1250		89.6	75-125		
Surr: 1-Chlorooctadecane	25.6	"	23.7		108	50-150		
Surr: Triacontane	23.8	"	23.5		101	50-150		
LCS Dup (0107056-BSD1)			Prepared	d & Analy	zed: 07/1	5/01		
Diesel Range Organics	1340	150 mg/kg wet	1250		107	75-125	17.9	20
Surr: 1-Chlorooctadecane	17.5	"	23.7		73.8	50-150		
Surr: Triacontane	21.3	"	23.5		90.6	50-150		
Matrix Spike (0107056-MS1)	Sour	ce: M107030-01	Prepared	d & Analy	zed: 07/1	5/01		
Diesel Range Organics	1530	150 mg/kg dry	1330	ND	114	60-140		
Surr: 1-Chlorooctadecane	16.9	"	25.2		67.1	50-150		
Surr: Triacontane	24.0	"	25.0		96.0	50-150		

North Creek Analytical - Mobile Lab



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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

ject Number: 21090 Reported:

Anchorage, AK 99502-1116 Project Manager: Anne Kranawetter 07/24/01 15:52

BTEX,MTBE and Naphthalene per EPA Method 8021B - Quality Control

North Creek Analytical - Mobile Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 0107064 - MeOH Extraction	on						
Blank (0107064-BLK1)				Prepared & A	Analyzed: 07/1	6/01	
Benzene	ND	0.0250 m	ıg/kg wet				
Toluene	ND	0.100	"				
Ethylbenzene	ND	0.100	"				
Xylenes (total)	ND	0.200	"				
Naphthalene	ND	1.00	"				
Surr: 4-BFB	2.61		"	2.50	104	50-150	
LCS (0107064-BS1)				Prepared & A	Analyzed: 07/1	6/01	
Benzene	2.39	0.0250 m	ıg/kg wet	2.50	95.6	69-138	
Toluene	2.53	0.100	"	2.50	101	53-151	
Ethylbenzene	2.52	0.100	"	2.50	101	61-141	
Xylenes (total)	7.73	0.200	"	7.50	103	62-141	
Naphthalene	3.09	1.00	"	2.50	124	65-135	
Surr: 4-BFB	2.76		"	2.50	110	50-150	

North Creek Analytical - Mobile Lab



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Bristol Environmental & Engineering 2000 W International Airport C#1

Project: Amchitka
Project Number: 21090

Reported:

Anchorage, AK 99502-1116

Project Manager: Anne Kranawetter

07/24/01 15:52

Total Metals per EPA 6000/7000 Series Methods - Quality Control

	Nort	h Creek	Analytic	al - Mo	bile Lal	b				
		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 0107076 - EPA 1631										
Blank (0107076-BLK1)				Prepare	ed: 07/20/0	1 Analyz	ed: 07/21/0	1		
Mercury	ND	0.00500	mg/kg wet							
LCS (0107076-BS1)				Prepare	ed: 07/20/0	1 Analyz	ed: 07/21/0	1		
Mercury	0.0108	0.00500	mg/kg wet	0.0100		108	85-115			
Duplicate (0107076-DUP1)	Sou	urce: M107(31-01	Prepare	ed: 07/20/0	1 Analyz	ed: 07/21/0	1		
Mercury	ND	0.00500	mg/kg dry		ND			20.1	20	Q-06
Matrix Spike (0107076-MS1)	So	urce: M107(031-01	Prepare	ed: 07/20/0	1 Analyz	ed: 07/21/0	1		
Mercury	0.00875		mg/kg dry	0.0102	ND	47.6	75-125			Q-02
Batch 0107081 - EPA 3050										
Blank (0107081-BLK1)				Prepare	ed: 07/22/0	1 Analyz	ed: 07/23/0	1		
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	"							
Cadmium	ND	2.50	"							
Chromium	ND	2.50	"							
Lead	ND	2.50	"							
Selenium	ND	2.50	"							
Silver	ND	2.50	"							
Vanadium	ND	2.50	"							
LCS (0107081-BS1)				Prepare	ed: 07/22/0	1 Analyz	ed: 07/23/0	1		
Arsenic	11.2	2.50	mg/kg wet	10.0		112	80-120			
Barium	10.5	2.50	"	10.0		105	80-120			
Cadmium	11.2	2.50	"	10.0		112	80-120			
Chromium	9.83	2.50	"	10.0		98.3	80-120			
Lead	9.89	2.50	"	10.0		98.9	80-120			
Selenium	10.5	2.50	"	10.0		105	80-120			
Silver	11.4	2.50	"	10.0		114	80-120			

North Creek Analytical - Mobile Lab

Vanadium

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

80-120

94.6

9.46

2.50

10.0



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Bristol Environmental & Engineering 2000 W International Airport C#1

Project: Amchitka
Project Number: 21090

Reported: 07/24/01 15:52

Anchorage, AK 99502-1116

Project Manager: Anne Kranawetter

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Mobile Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 0107081 - EPA 3050

Duplicate (0107081-DUP1)	Source: M107031-01		Prepared: 07/22/01 Analyzed	: 07/23/01	
Arsenic	ND	2.50 mg/kg dry	ND	30.0	40
Barium	12.9	2.50 "	11.7	9.76	40
Cadmium	ND	2.50 "	ND		40
Chromium	20.7	2.50 "	18.1	13.4	40
Lead	ND	2.50 "	ND	26.5	40
Selenium	ND	2.50 "	ND		40
Silver	ND	2.50 "	ND	16.5	40
Vanadium	66.9	2.50 "	63.0	6.00	40
Matrix Spike (0107081-MS1)	Source: M107031-01		Prepared: 07/22/01 Analyzed: 07/23/01		

Matrix Spike (0107081-MS1)	Source:	M107031-01	Prepare	d: 07/22/0	l Analyz	ed: 07/23/01
Arsenic	12.4	2.25 mg/kg dry	10.1	ND	107	75-125
Barium	22.4	2.25 "	10.1	11.7	106	75-125
Cadmium	10.9	2.25 "	10.1	ND	108	75-125
Chromium	28.9	2.25 "	10.1	18.1	107	75-125
Lead	9.32	2.25 "	10.1	ND	81.3	75-125
Selenium	9.31	2.25 "	10.1	ND	92.2	75-125
Silver	10.3	2.25 "	10.1	ND	102	75-125
Vanadium	74.0	2.25 "	10.1	63.0	109	75-125

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Bristol Environmental & Engineering 2000 W International Airport C#1 Project Number: 21090

Project Manager: Anne Kranawetter

Project: Amchitka

Reported: 07/24/01 15:52

Notes and Definitions

Q-02 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.

Q-06 Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.

DET Analyte DETECTED

Anchorage, AK 99502-1116

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.

Sample results reported on a wet weight basis (as received) wet

RPD Relative Percent Difference

North Creek Analytical - Mobile Lab

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception		
			Report recreated from:		
			\\sisters\elmnt\Report\M107035 FINAL 07 24 01		
			1552.mdb		
			Default Report (not modified)		
0107076-DUP1	Hg Total CVAF 1631	Mercury	Q-06		
0107076-DUP1	Hg Total CVAF 1631	Mercury	Exceeds RPD limit		
0107076-MS1	Hg Total CVAF 1631	Mercury	Q-02		
0107076-MS1	Hg Total CVAF 1631	Mercury	Exceeds lower control limit		